

This Page Is Inserted by IFW Operations
and is not a part of the Official Record

BEST AVAILABLE IMAGES

Defective images within this document are accurate representations of the original documents submitted by the applicant.

Defects in the images may include (but are not limited to):

- BLACK BORDERS
- TEXT CUT OFF AT TOP, BOTTOM OR SIDES
- FADED TEXT
- ILLEGIBLE TEXT
- SKEWED/SLANTED IMAGES
- COLORED PHOTOS
- BLACK OR VERY BLACK AND WHITE DARK PHOTOS
- GRAY SCALE DOCUMENTS

IMAGES ARE BEST AVAILABLE COPY.

**As rescanning documents *will not* correct images,
please do not report the images to the
Image Problem Mailbox.**

CLAIMS:

1. A roll-up type door assembly comprising:

a flexible curtain made of rubber, synthetic rubber or fabric material and capable of closing a doorway, said curtain having upper and lower ends and two opposite side edges;

a curtain winding mechanism having said upper end of said curtain attached thereto for raising said curtain by rolling said curtain up;

two straight, extruded flexible guide members which are mounted so as to extend vertically on opposite, vertical sides of said doorway during use of said door assembly, two side edge sections of said curtain each being movable in a respective one of said guide members when said curtain is raised or lowered during use thereof;

each guide member formed with integrally connected, inner and outer, longitudinally extending, resilient wall sections, each wall section having an inwardly projecting, longitudinally extending rib, the two ribs of each guide member forming an elongate slot through which a respective one of said side edge sections can extend during use of the door assembly; and

spaced-apart pairs of curtain lock members mounted on and distributed along each side edge section of said curtain, the lock members of each pair being positioned opposite one another on front and rear surfaces of said curtain respectively, the combined thickness of each pair of said lock members and said curtain material exceeding the width of said elongate slot so that the pairs of lock members prevent said side edge sections of the curtain from escaping out of the guide members under normal windload or pressure conditions,

wherein at least some curtain lock members engage with the ribs of their respective guide members when an excessive windload or impact is put upon the curtain and this engagement causes the wall sections of at least one guide member to separate from each other and thereby release the respective side edge section from the at least one guide member with little if any damage to the curtain or the guide members.

2. A door assembly according to claim 1 wherein each curtain lock member is made of a low friction, wear resistant, plastics material, has an elongate main body section having a rounded exterior surface as seen from an end of the respective lock member, and is mounted on its side edge section of the curtain so that its longitudinal axis is substantially parallel to the adjacent side edge of the curtain.
3. A door assembly according to claim 2 wherein each curtain lock member has a substantially flat wing section integrally connected to one side of said main body section and adapted to extend outwardly through said slot during use of said door assembly, and the combined thickness of the two wing sections of a pair of lock members and said curtain material is less than the width of said elongate slot.
4. A door assembly according to claim 1 wherein each guide member comprises a single elongate hollow member made of metal which is sufficiently flexible and resilient that pairs of the curtain lock members can be pulled out of their respective guide members by excessive windload or an impact with little, if any, damage to the guide member.
5. A door assembly according to claim 1 wherein each longitudinally extending rib forms a longitudinally extending concave surface which is concave as seen in a transverse cross-section of the respective guide member, and the two concave surfaces of the two ribs of each guide member form an elongate split socket arrangement for engaging pairs of said lock members located in the respective guide member during use of said door assembly.
6. A door assembly according to claim 1 wherein each curtain lock member is formed with at least two screw holes and the lock members of each pair are mounted on their respective side edge section and are connected to each other by at least two screws that extend through or into the screw holes of their respective lock members.

7. A door assembly according to claim 2 wherein each guide member has a base which is integrally connected to and joins the inner and outer wall sections of the guide member and said base has a plurality of threaded fastener holes formed therein and longitudinally spaced along the guide member, and wherein said door assembly includes threaded fasteners for mounting said guide members on support surfaces, said threaded fasteners in use extending into and engaging said threaded fastener holes.

8. A door assembly according to claim 1 including strips of low friction, wear resistant material affixed to both of said front and rear surfaces of said curtain adjacent said opposite side edges, said wear resistant material selected from a group of materials consisting of oliphatic polyetherurethane in dichlormethane (OPD), and polyethylene terephthalate polyester (PET) with a polyvinylchloride backing.

9. A door assembly according to claim 2 wherein each curtain lock member has two opposite end sections which are tapered and has two counter-bored screw holes for mounting the lock member to the curtain by means of screws.

10. A door assembly according to claim 1 including a rigid bottom bar mounted on said lower end of the curtain and having opposite ends which are located within the doorway and horizontally inwards from the guide members during use of the door assembly, wherein at least one pair of said lock members is mounted on each side edge section of the curtain at a location horizontally outwardly from a respective adjacent end of the bottom bar when said door assembly is in use.

11. A door assembly according to claim 2 wherein each curtain lock member has a bottom provided with a plurality of short pins that project into the adjacent side edge section of the curtain in order to assist in holding the curtain lock member in place on the curtain during use of the door assembly.

12. An elongate guide for use with a roll-up type door equipped with curtain lock mechanisms arranged along two opposite side edge sections of a flexible

curtain for said door, said guide comprising an elongate guide member having:

inner and outer, longitudinally extending, substantially planar wall sections with a cavity formed between the wall sections and adapted to slidably receive one of said side edge sections;

a base section integrally connected to and joining said inner and outer wall sections; and

two longitudinally extending ribs each integrally formed on a respective one of said inner and outer wall sections and together defining one end of said cavity as seen in transverse cross-section, the two ribs projecting inwardly towards each other and forming an elongate slot which is substantially narrower than the maximum width of said cavity as measured between the two wall sections and through which a respective one of said side edge sections can extend during use of the guide, wherein each rib has an elongate interior surface which is concave as seen in said transverse cross-section, and the concave surfaces of the two ribs form an elongate, split curved socket for engaging the curtain lock mechanism when the lock mechanism is located in the guide during use thereof, said split curved socket being capable of engaging said lock mechanism on both front and back sides of said curtain simultaneously.

13. An elongate guide according to claim 12 wherein said guide member is an integral, one piece, metal extrusion.

14. An elongate guide according to claim 13 wherein said guide member is made of aluminum alloy and is formed with screw holes distributed along the length of said base section and provided for attaching said guide member to a support frame.

15. An elongate guide according to claim 13 wherein said slot has a width ranging between $7/16^{\text{th}}$ inch and $1/2$ inch approximately and said cavity has a maximum width of about one inch as measured between the two wall sections with the wall sections in their normal unstressed state.

16. An elongate guide according to claim 12 wherein said wall sections are equal in width in the direction extending from said base section towards said slot and both ribs are formed on free inner edges of their respective wall sections.

17. A door curtain lock for retaining an edge section of a flexible door curtain in an elongate door guide mounted on a side of a doorway, said lock comprising a lock member made of a low friction, wear resistant plastics material, said lock member having an elongate, rigid main body section having an exterior surface which is rounded as viewed from one end of the lock member, said rounded exterior surface extending to at least one longitudinal side of the main body section, said lock member also having an inner surface adapted for mounting to a front or rear surface of said door curtain, wherein at least one hole for a mechanical fastener is formed in said main body section.

18. A door curtain lock according to claim 17 wherein said lock member has a substantially flat wing section integrally connected to one longitudinal side of the main body section and adapted to extend into an elongate slot formed in said door guide during use of said curtain lock, wherein said wing section projects outwardly from an inner edge of the main body section.

19. A door curtain lock according to claim 17 wherein there are two holes for mechanical fasteners formed in said main body section and said two holes are countersunk in order to accommodate heads of the mechanical fasteners.

20. A door curtain lock according to claim 17 wherein said lock member has two opposite end sections which taper longitudinally outwardly and in the direction of the inner surface of the lock member.

21. A door curtain lock according to claim 17 wherein two substantially flat wing sections extend outwardly from the two longitudinal sides of the main body section, at least one of said wing sections being adapted to extend into an elongate slot formed in said door guide during use of the curtain lock, and wherein both wing sections project from respective inner edges of the main body section.

22. A door curtain lock according to claim 17 wherein said lock member is made of copolymer polyacetal resin.
23. A door curtain lock according to claim 17 wherein a plurality of short pins are provided on and distributed over said inner surface, said pins assisting in holding the curtain lock in place on said door curtain during use of the door curtain.
24. A door curtain for use in a roll-up door apparatus, said curtain comprising:
a flexible curtain made of rubber, synthetic rubber or fabric and capable of closing a doorway, said curtain having front and rear surfaces, upper and lower ends, and two opposite side edges,
strips of low friction, wear-resistant material affixed to at least one of said front and rear surfaces adjacent said opposite side edges, said wear resistant material selected from the group consisting of oliphatic polyurethane in dichlormethane (OPD) and polyethylene terephthalate (PET) polyester with a polyvinylchloride backing; and
a plurality of curtain lock members mounted on and distributed along said strips of wear-resistant material, said lock members being spaced apart from one another.
25. A door curtain according to claim 24 wherein said strips of wear resistant material are affixed to both said front and rear surfaces of the curtain.
26. A door curtain according to claim 24 wherein said strips of wear resistant material each include a base coat of rubber adhesive which is bonded to the adjacent surface of the curtain.
27. A door curtain according to claim 25 wherein said curtain lock members are arranged in spaced-apart pairs and the lock members of each pair are positioned opposite one another on said front and rear surfaces of said curtain respectively.

28. A door curtain according to claim 26 wherein said rubber adhesive is XL-2000™ rubber adhesive.

29. A door curtain according to claim 26 wherein each strip of wear resistant material is made by initially applying said OPD to said base coat of rubber adhesive, allowing said OPD and base coat to dry, and then bonding the combination strip comprising OPD and said rubber adhesive to said curtain using further rubber adhesive.

30. A door curtain according to claim 24 wherein each curtain lock member has an elongate main body section having a rounded exterior surface as seen from an end of the respective curtain lock member and is mounted on its strip of wear-resistant material so that its longitudinal axis is substantially parallel to the adjacent side edge of the curtain.

31. A door curtain according to claim 25 including a rigid bottom bar mounted on said lower end of the curtain and having opposite ends located inwardly from said side edges of the curtain.